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DEPARTMENT OF NATURAL RESOURCES

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FILED

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SECRETARY, BOARD OF
OIL, GAS & MINING

October 18, 2011

TO: Board of Oil, Gas and Mining

FROM: Dustin Doucet, Petroleum Engineer *OKD*
Brad Hill, Geologist/Permitting Manager *BH*
Clint Dworshak, Geologist/Compliance Manager *CD*

RE: Review of Docket No. 2011-019, Cause No. 139-87

The Division of Oil, Gas and Mining (the "Division") has reviewed the referenced matter that will be presented to the Board of Oil, Gas and Mining (the "Board") during the October 26, 2011, hearing. With this memorandum, the Division summarizes its review and consideration of the request.

Summary of Request for Agency Action

Bill Barrett Corporation ("BBC") by and through their attorney Frederick M. MacDonald with Beatty & Wozniak, P.C., requests that the Board extend the Board's Order entered in Cause Nos. 139-8, 139-85 and 139-84 to allow for up to four producing wells per sectional drilling unit for the production of oil, gas and associated hydrocarbons from the Lower Green River and Wasatch formations in portions of Townships 3 and 4 South, Ranges 5 through 8 West, Duchesne County, Utah ("Subject Lands").

Review of Exhibits

Land –

The petitioners provided land exhibits C - a map showing land, lease and spacing status and exhibit E - a copy of mailing receipts for mail sent to parties. Exhibit C shows a large area in the center that is covered by Cause 139-84 that allows the drilling of four wells per section. On the east and west are areas previously spaced that allow four wells per section in Cause 139-85. The Subject Lands, immediately to the south and west of these areas, are not currently spaced and fall under the general well siting rule which allows a well to be located in the center of a 40 acre tract except for four sections to the west of this area currently subject to Cause 139-42. The mineral ownership in the Subject Lands is primarily tribal with some fee and state. Exhibit C does not include requested sections 23 through 29 and sections 31 through 36 of Township 4 south, Range 5 west in the general well siting outline. It is not readily



apparent from Exhibit C what the mineral ownership is in the Subject Lands. The petitioner should explain the differing ownership and how a sectional drilling unit will protect correlative rights. There is also a discrepancy between the request header on the exhibits and on the request for agency action that should be clarified.

Exhibit D shows ownership and wells on BBC operated lands. In addition to several directional wells it shows several horizontal wells that have been drilled into the Uteland Butte limestone member of the Lower Green River Formation. The Division understands that the requested four wells per 640-acre drilling unit will include all (vertical, directional and horizontal) wells.

Geology-

The petitioners provided geologic exhibit F a type log for the Shell-Ute 1-18B5 well referenced in Cause No. 139-84, exhibit G a cross-section A-A' reference plat, and exhibit H a Green River - Wasatch geologic cross-section A-A'. The petitioner should present geologic exhibits and testimony at the hearing supporting why four wells per section are necessary to effectively drain a 640-acre drilling unit underlying the subject lands. Testimony should also be provided as to how the combination of horizontal and vertical wells will attain this effective drainage.

Engineering -

Exhibit I provides information on the cumulative production from the 20 wells drilled on the Subject Lands. Exhibit J provides an Estimated Ultimate Recovery (EUR) distribution from 16 wells located adjacent to the Subject Lands. These 16 wells are identified on Exhibit K. The Pmean EUR for wells on adjacent lands is 218 MBO. The wells on the Subject Lands shown on Exhibit I do not have cumulative production close to that amount to date. The majority of the wells in the Subject Lands are recent completions however. Exhibits L through M show that a few wells (one directional and two horizontals) in the Subject Lands do perform on trend with wells in the adjacent lands. Further testimony and exhibits (if necessary) should be provided showing how this translates across the Subject Lands. Explanations should be provided on how the horizontal and vertical wells will effectively drain the 640-acre drilling unit.

Exhibit N shows economics from a typical well in the Lake Canyon area. The petitioner uses an EUR of 218 MBO or 285 MBOE to calculate economics. This is the Pmean EUR from Exhibit K. With the parameters given in this exhibit it shows drilling wells to be economic. Again, testimony or exhibits should be provided showing how the suggested EUR can be expected in the Subject Lands. Also, none of the sections in the surrounding area have four wells drilled in them. Most of the sections have two wells or less drilled in them in the adjacent lands. This is particularly true in the sections with the wells referenced in Exhibits J through L. Testimony should be provided on how the same EUR could be expected on a density of four wells per section.

Points to Consider and Recommendation

The information provided was derived from the wells drilled and produced in or adjacent to the Subject Lands. However, drilling has been sparse within the Subject Lands. In fact the Subject Lands outside T4S, R6W have only three plugged wells with 106 BO cumulative production.

It is important to note that, information from Cause 139-84 showed the loss of pressure reduces the recovery of each consecutive well in a section thus, if the third and fourth wells were drilled simultaneously or near in time the ultimate recovery would be greater than if the fourth is drilled long after the third. This encourages drilling programs of more than one additional well and also would offer savings for rig mobilization and other costs. It should also be noted that circumstances for each section are different and will result in not every drilling unit receiving a third or fourth or even a second well. This should however, not limit the opportunity for operators to consider additional wells. Additional wells could also help if an operator attempted secondary recovery in the area. Due to improved well casing/cementing practices newer wells should not lead to the same well structural failures many older wells had and they would be available for use.

The petitioner must make the case that the geology in much of the Subject Lands is very similar to the adjacent land covered by Causes 139-84 and 139-85 since drilling and production from the Subject Lands is sparse. Under current spacing many wells could be drilled and information gained used to support a spacing request.

If the petitioners testimony adequately addresses the concerns raised in this memo and pending no objections or other unforeseen information presented at the hearing, the Division would support approval of the request. Division staff will participate in the hearing, listen to testimony given, and ask questions if necessary for clarification.

CERTIFICATE OF SERVICE

I hereby certify that I caused a true and correct copy of the foregoing STAFF MEMORANDUM for Docket No. 2011-019, Cause No. 139-87 to be mailed with postage prepaid, this 20th day of October, 2011, to the following:

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